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TECH BUBBLE 2022

The Case of Global Overvaluation

Author
Katya Loviana & Hilman Nurjaman
Editor
Alfredo Putrawidjoyo
Designer & Layouter
Ahmad Nur Hasan

Background

The technology sector has grown rapidly in recent years, particularly during the Covid-19 pandemic. The industry benefitted from an increase in online consumption.[1] However, this spectacular economic growth was be followed by a sharp decline in 2022, characterized by shocks from skyrocketing asset values, increases in lending rates, and inflation, which will eventually limit global market consumption activities.[2] These downturns are also known as bubble bursts.[3] The technology industry was one of the hardest-hit sectors as the bubble burst and the world economy started to slow down. The world economy downturn was triggered by financial concentration on digital markets, rising internet rates, and inflation.[4] Moreover, this condition has resulted in massive layoffs by both large and small technology companies, which have also started to adjust in order to reduce company spending on workers by encouraging work automation through robot technology or artificial intelligence to do the same work. Then, how will the bursting of this technology bubble impact the global economic cycle?

The exposure of the technology industry to the world's complex supply networks has expanded over time, whether due to natural factors such as climate change and resource scarcity or non-natural factors such as the operating landscape of investors, workers, and customers.[5] Due to the company's natural and operational challenges, the technology industry currently forms an economic sector that is in a state of uncertainty and is vulnerable to global market volatility.[6] Moreover, several economic sectors are dealing with digital transformation in order to gain effectiveness values at work and optimize economic growth in the context of a pandemic crisis that has been going since the end of 2019.[7] Not surprisingly, the community's socioeconomic ecosystem quickly reacted by undergoing transformations as a result of the pressure of needs across distances and global market demands during the world's large-scale social restrictions caused by the pandemic.[8] This, of course, makes digital transformation efforts such as digital infrastructure upgrades, data analysis, and business model evolution a collective obligation,[9] with greater support from everything-as-a-service (XaaS) systems and edge intelligence in order to maximize digital transformation efforts.[10]

The technology bubble bursting has become a worrying phenomenon for the global industry's long-term suitability. The crisis conditions from the tech bubble burst were fueled by pressure from overvaluations and declining stocks.[11] Similarly, the pandemic is not the only factor contributing to the technology bubble in 2022, there are other pressing issues, such as Russia's invasion of Ukraine, market regulations, and increased interest rates, all of which threaten the global socioeconomic situation.[12] Many technology industries are developing rapidly during the Covid-19 pandemic crisis. For example, streaming and social media companies have benefited from community activities as consumers who spend a lot of time at home.[13] However, this is in contrast to digital transportation companies such as Uber which are experiencing quite a challenge as people's mobilization decreases, although they still benefit from low interest rates during the pandemic.[14] This crisis condition seems to have similarities with the previous bubble burst, namely the dotcom bubble which was caused by the domination of shares in dotcom internet companies.[15] In the 1990s, the economic sector experienced massive growth in Internet adoption with valuations increasing over time and experiencing a boom in the early 2000s and concentrated solely on dotcom companies.[16] For instance, Zoom, the video conferencing company, despite having grown significantly during the pandemic, has reported a loss of $54 billion to $27 billion since early 2022. Aside from that, this has also happened to Indonesian technology companies such as Shopee, GoTo, and Ruangguru, which is laying off employees at the end of 2022 while other companies have gone out of business.[17] Therefore, this paper attempts to frame the dynamics of the technology industry through the explosion of the technology bubble and the dotcom bubble in the global economy.

How to Spot Tech Bubble

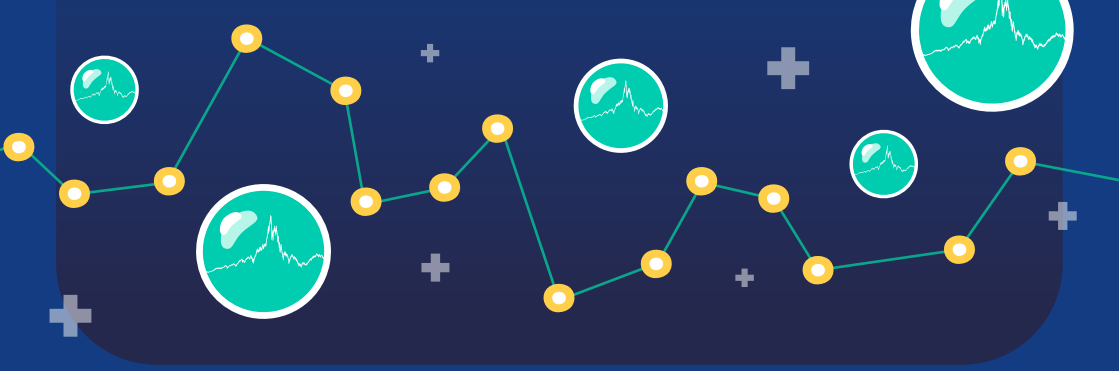
The tech bubble in 2022 has been the subject of much debate. Economists and large corporations believe that the phenomenon of technology bubbles refers to overvaluations and fluctuations in global stock values indicating changes in economic fundamentals, this covers economic growth, product and service prices, and the state budget.[18] Meanwhile, other groups of economists believe that what is happening in 2022 is competition from the global stock market accelerated by globalization through massive digital media during a pandemic and not a huge economic shock. This is especially interesting, as bubbles are usually only identified in retrospect after a massive value drop earlier.[19] Bubbles are frequently interpreted as an economic cycle defined by rapid increases in market value caused by uncertain market behavior, followed by rapid inflation or contraction, which can occasionally cause bubble bursts.[20]

In the context of the economic trajectory of 2022, due to shifting trends emerging through digital asset trading, this year's economic cyclical collapse in the technology industry market is contradictory.[21] Furthermore, the pandemic has sufficiently altered the working environment. Business pattern is decentralizing or is no longer concentrated in the office with a physical presence. This phase transition is an ordinary phenomenon that occurs when an economic sector faces sudden and unexpected change as a result of unpredictable natural and operational factors.[22] This scenario demonstrates that the global technology industry market has become highly unstable, making it difficult to identify regular patterns. Interestingly, the bursting of this technology bubble has forced in tools to create new opportunities in the technology industry, such as the growth of new technologies and innovations in the global market that can improve work efficiency, such as the launch of big data and artificial intelligence (AI). The artificial intelligence algorithms that can gather data for mapping user activity patterns that can optimize search or delivery of advertisements has benefited the social media, search engine, and e-commerce industries.[23] In a similar way the use of robotic automation in the service sector, such as carrying out patient checks and operations, delivering goods to hotel rooms, or assisting in agricultural maintenance, is practically entering a new industry. In addition, this technology bubble could provide birth to a competition ecosystem, which may threaten growth because the majority of the economic pace is concentrated in digital sectors at the same time, making it difficult to forecast with so many competitors.[24] Although in the end, the overlapping prospects for new industries in the midst of digital disruption and world crisis conditions have sparked concerns about the sustainability of the industry in the long term.

Glimpse about Dotcom Bubble in the 2000s

The dotcom bubble is a stock market bubble phenomenon caused by business speculation in and around 1995 to 2000.[25] The name comes from the fact that the majority of these businesses have a ".com" domain on their internet addresses. The NASDAQ Composite Index, which represents the total value of outstanding shares, is dominated by technology companies. During the dotcom bubble, NASDAQ Composite Index increased nearly seven-fold, indicating investor enthusiasm for dotcom companies.[26] Then, in the early 2000s, the bubble bursts and stock prices were significantly dropped.[27]

The root cause of the dotcom bubble can be segmented into two players: the capital market and dotcom companies. In the capital market, there was a wave of overly optimistic investors and funders. Their response towards the growth of dotcom companies predominantly triggers the burst. First, while there was a wave of pessimistic investors to level the optimistic ones, those pessimistic investors' attempts to short the dotcom stock was limited and thus fail to offset the optimistic beliefs. Second, regarding stock heterogeneity, dotcom stocks are owned mostly by individual investors rather than institution investor. Hence, there was a more diverse behaviour of individual investors that affect the stock price. Those two elements made the dotcom bubble greater than financial anomalies in general.[28] Then, funders capturing the sense of optimism from investors led to a flood of fund to dotcom companies that stimulated their growth even further. Alternately, investors capture that sense of optimism from funders and the two participants kept on influencing each other to pour money.



Meanwhile, the tech companies themselves failed to turn profit. At the time, tech companies were valued on future profits and earnings, assuming that the business model holds. In other words, investments were highly speculative. However, the internet was still considered new back then, and traditional business models may not work as well as before. Additionally, the capital market did not carefully select which business to fund.[29] Thus, just like a bubble, those chains of event led to soaring stock prices of tech companies, making them considered overvalued.[30]

Then, on March 11, 2000, the bubble bursts as NASDAQ index fell together with the news of Japan's recession. From this point on, investors began questioning the sustainability of internet and tech companies (dotcom).[31] At the time, there was an economic policy that increased interest rates to prevent inflation and reduced investment capital by making larger loans.[32] This caused investors to panic, particularly those who had large share sales in dotcom companies. This led to a series of panic selling, which further drove the prices further down. By October 4, 2002, the NASDAQ index dropped 76.81% from its peak of 5,048 on March 10, 2000 to 1,140.[33]

Thus, the dotcom bubble can be understood as representing a chain period of fundamentally shifting investment momentum in global markets. In particular, this phenomenon examines the relevance and sustainability of financial values from 1995-2000, which are representative of constructing new economy enterprises. Furthermore, the phenomenon of the dotcom bubble can become knowledge, leading to an understanding of future economic phenomena such as stock prices that reflect the company's and future value. This is also relevant to a new phenomenon in 2022, technology bubbles, to evaluate and anticipate higher losses.

Tech Bubble in the United States

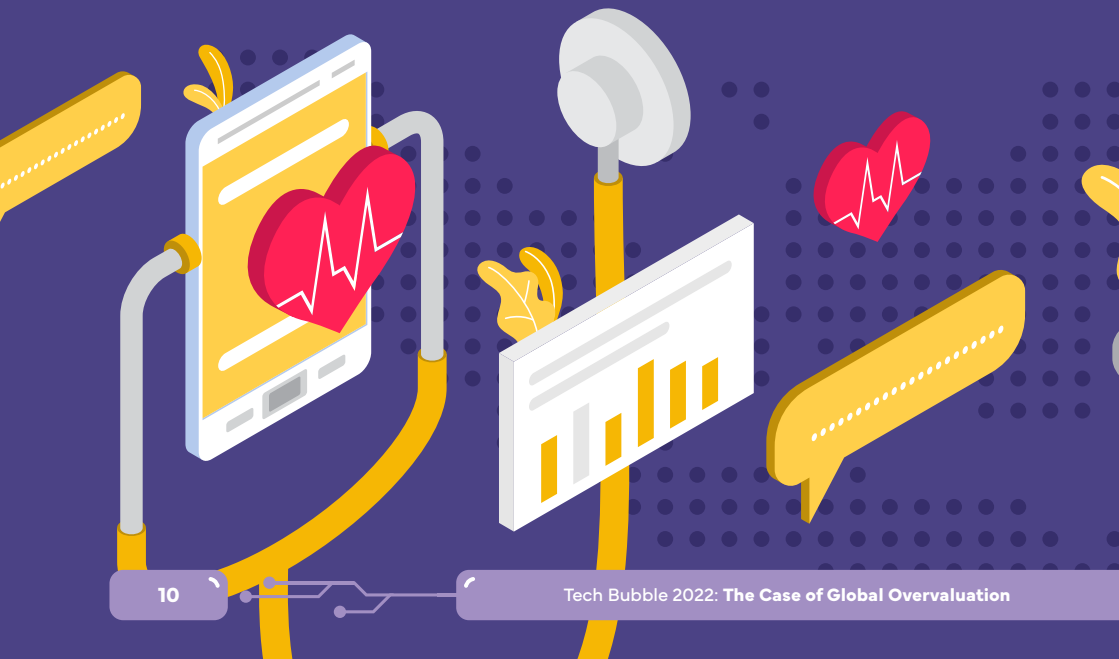
The rise of tech industries in the United States already started way before the pandemic in the early 2010s. In 2012, Facebook held the largest tech initial public offering (IPO) in the United States, valued at $100 billion with only $4 billion in revenue. This market another phenomen of tech companies' overvaluation, growing another concern of a bubble burst. In this regard, some start-ups did go bankrupt, but new ones also remained and new ones kept on appearing with new kinds of funding, such as private equity and sovereign wealth funds.[34]

In 2020, the pandemic came and the new norms of doing everything from home increased role of tech in personal lives, creating business opportunities for tech companies. Within nine months, the NASDAQ stock index increased by 25% in September 2020, making its total leap of over 400% over the past ten years.[35] By the beginning of 2021, there were over 500 start-ups globally valued at $1 billion with a total of $164 billion in the U.S. only. This remarkable record was also supported by the Federal Reserve's action of printing money, setting low rates, and the flood of venture capital funding to start-ups.[36] Then, in 2022, there was a fear of crisis as the U.S. interest rate rose and inflation was spotted. The U.S. inflation reached its highest level in decades at more than 6% by February 2022. This situation meets the precondition of problematic inflation: the increase is sustainable, persistent, and sizeable. Initially, policymakers see inflation as transitory due to the stimulus given during the pandemic and fail to perceive it as a bigger threat. This encouraged them to keep increasing the budget deficit and not start raising interest rates. By the time they did stop, inflation was already widespread.[37]

One possible effect related to this tech bubble is overvaluation. Liquidity injection from U.S. quantitative easing policy promote an environment for investment on tech companies. Though high valuation may imply that the business is performing or predicted to perform well, overvaluation is another problem.[38] Most start-ups aren't making any profit yet because of money-burning schemes to get market exposure. Exposure to the market, consumers, and the number of growing users has been the company's main objectives instead of income and profit. These indicators reflect back the 2000s Dotcom Bubble. Again, tech companies fail to turn profit whilst the capital market shows an optimistic wave that dangerously biases the stock price. Additionally, the U.S. themselves are said to enter a recession already. However, whether the bubble has burst or not, the debate remains.

The Potential of Tech Bubble in Indonesia

The tech bubble may occur not only in the United States but also in Indonesia. Even before the pandemic, many tech start-up firms grew rapidly with a total of US$2.8 billion invested in Indonesian start-ups. This showed similar patter to U.S. tech development though at a later time. Then, the pandemic hit the Indonesian economy. The work from home scheme provides a stimulating environment for digitalization in all sectors, showing opportunities for firms that rely on digitalization in their business model to widen and deeply penetrate the market. For example, Halodoc in the health-tech industry. The number of people who have downloaded Halodoc on their smartphones has more than doubled since the pandemic. Doctor consultation services have grown more than tenfold. It was also followed by the growth of health store service by six times as well as doctor's appointment service by three times.[39] Further, this also create opportunities for existing tech companies to expand, such as Gojek and Tokopedia that formed a holding company called GoTo since 2022. The GoTo itself has become the largest Indonesian startup in terms of market capitalization compared to other startups in Indonesia. The major innovation of those companies marked the new trend of startups in Indonesia, which signalled the start of a price bubble among tech startups.



However, the optimism is not sustainable. Markets are starting to get saturated, business trends are changing quickly, and the society are transitioning back to pre-pandemic norms. In addition, Indonesia is also facing the threat of 2023 recession.[40] In consequence of that, start-up layoffs have been on widely discussed of them are big start-ups with big investors behind them, such as with total funding amount of US$94.5 million and have reached Series B funding[41]–third round of funding for companies that are usually well-established.[42] For Tanihub, not only have they laid off some of their workers and closed two warehouses, but they have also been sued for default in their agricultural investment business by its consumers.[43] Then, in September 2022, Shopee Indonesia terminated 3% of their workers, or around 6,000 workers, in order adjust for the future recession that will probably happen in 2023. However, the layoffs continued in November of 2022 and March of 2023 with unknown number.[44] Then, JD. ID. also laid off 30% of its workers, or around 200 workers, before shutting down all its business operations in Indonesia on the 31st of March 2023.[45] Other start-ups, like Sayurbox, stated that the layoff policy on 5% of its workers had to be taken as it would lead to the financial stability of the company.[46]

A prominent company like GoTo, with a valuation of US$28 billion,[47] is also not free from the threat of tech bubble. Since the Initial Public Offering (IPO) of GoTo in 2022, the GoTo stock price has fallen 69.15%, decreasing its market capitalisation by more than 200 trillion rupiahs.[48] Other than that, Bukalapak, the first startup to be publicly listed on the stock exchange with a valuation of US$7.5 billion,[49] experienced the same problem. By 6th of April 2023, Bukalapak's stock price has drastically decreased by more than 70% since the IPO, more than the GoTo's decreasing point.[50] These conditions showed that the tech bubble burst can even threaten the big players in the market, signalling pessimism to investors.

Based on that situation, those big startups probably have not received additional investors anymore, hence unable to spend their investment funding on a "money-burning" scheme. Similar to the rest of the world, many tech startups are overvaulted whilst in reality not making any profit. In this case, the tech industry, especially in a startup business, are seemed to be at its low points and the effect itself is exhibited through their laid-off policies and business bankruptcies. This situation is publicly expressed by workers, especially those experiencing lay-off themselves on social media.

Conclusion

It can be seen the capital market responses, from both retail and institution investors, are reacting somewhat similar to the dotcom bubble, underpinning overvaluation as the problem. Tech stock prices are also seen to have dropped. In that regard, many conclude that the bubble has burst. However, many still debate on how loud the burst is. One significant difference between the current tech bubble and the 2000s dotcom bubble is business performance. During the 2000s dotcom bubble, internet was still relatively new, and businesses failed to adjust traditional business models. This led to failing business performances, which worsen the bubble. However, in the current tech bubble, many startups have promising business models, especially as tech industry has progressed significantly.[51] Additionally, the economic condition we are currently facing are rather triggered by global health factor of COVID-19. Thus, the two bubble phenomena may not be as comparable as we thought. Nevertheless, policymakers, tech companies, and the society in general, must not overlook it.

References

[1] Ingram, D. (2022). Another tech bubble bursts: 2022 has been brutal for Silicon Valley workers. NBC News. Available at: https://www.nbcnews.com/tech/tech-news/another-tech-bubble-bursts-2022-brutal-silicon-valley-workers-rcna56435

[2] Ibid.

[3] Mwangi, K. (2022). 2022: The year that bubble burst. Business Daily. Available at: https://www.businessdailyafrica.com/bd/corporate/technology/2022-the-year-that-tech-bubble-burst-4068350

[4] Kenton, W. (2022). What Is an Economic Bubble and How Does It Work, With Examples. Investopedia. Available at: https://www.investopedia.com/terms/b/bubble.asp#:~:text=A%20bubble%20is%20an%20economic,or%20a%20%22bubble%20burst.%22

[5] Palandari, P. (2022). 'A Decade of Change: How Tech Evolved in the 2010s and What's in Store for the 2020s'. Available at: https://www.nasdaq.com/articles/a-decade-of-change%3A-how-tech-evolved-in-the-2010s-and-whats-in-store-for-the-2020s

[6] Ibid.

[7] Ibid.

[8] Deloitte Development LLC. (2022) Technology Industry Outlook.

[9] Ibid.

[10] Deloitte. (2020) COVID-19 outlook for the US technology industry.

[11] Robson, K. (2022). How valid are fears about the tech bubble popping? Available at: https://www.retailbankerinternational.com/analysis/is-the-tech-bubble-about-to-burst/

[12] Ibid.

[13] Ibid.

[14] Ibid.

[15] Morris, J.J. and Alam, P. (2012) 'Value relevance and the dot-com bubble of the 1990s', Quarterly Review of Economics and Finance, 52(2), pp. 243–255. Available at: https://doi.org/10.1016/j.qref.2012.04.001.

[16] Idzikowska, E. and Dyl, M. (2001) 'Monetary Policy in the US during the Dot-Com Bubble (1996-2001)', pp. 177–187.

[17] Burhan, F. A. (2022) 'Marak PHK, Benarkah Startup Indonesia Mengalami Bubble Burst?' Katadata.co.id. Available at: https://katadata.co.id/desysetyowati/digital/62affce2ee986/marak-phk-benarkah-startup-indonesia-mengalami-bubble-burst

[18] Zautner, D. (2022) 'Dancing on the Edge of Chaos: A Phase Transition in the 2022 Tech Bubble', SSRN Electronic Journal, pp. 1–9. Available at: https://doi.org/10.2139/ssrn.4298959

[19] Kenton, W. (2022). What Is an Economic Bubble and How Does It Work, With Examples. Investopedia. Available at: https://www.investopedia.com/terms/b/bubble.asp#:~:text=A%20bubble%20is%20an%20economic,or%20a%20%22bubble%20burst.%22

[20] Ibid.

[21] Zautner, D. (2022) 'Dancing on the Edge of Chaos: A Phase Transition in the 2022 Tech Bubble', SSRN Electronic Journal, pp. 1–9. Available at: https://doi.org/10.2139/ssrn.4298959

[22] Ibid.

[23] Palandari, P. (2022). 'A Decade of Change: How Tech Evolved in the 2010s and What's in Store for the 2020s'. Available at: https://www.nasdaq.com/articles/a-decade-of-change%3A-how-tech-evolved-in-the-2010s-and-whats-in-store-for-the-2020s

[24] Zautner, D. (2022) 'Dancing on the Edge of Chaos: A Phase Transition in the 2022 Tech Bubble', SSRN Electronic Journal, pp. 1–9. Available at: https://doi.org/10.2139/ssrn.4298959

[25] Morris, J.J. and Alam, P. (2012) 'Value relevance and the dot-com bubble of the 1990s', Quarterly Review of Economics and Finance, 52(2), pp. 243–255. Diakses di: https://doi.org/10.1016/j.qref.2012.04.001.

[26] Ibid.

[27] Idzikowska, E. and Dyl, M. (2001) 'Monetary Policy in the US during the Dot-Com Bubble (1996-2001)', pp. 177–187.

[28] Ofek E. and Richardson, M. (2003) 'DotCom Mania: The Rise and Fall of Internet Stock Prices', The Journal of Finance, 58(3), pp. 1113–1137. Available at: https://doi.org/10.1111/1540-6261.00560.

[29] Mills, D. Quinn. (2001) "Who's to Blame for the Bubble?" Harvard Business Review, hbr.org/2001/05/whos-to-blame-for-the-bubble.

[30] Paluteder, Diana. (2022) "Dot-Com Bubble Explained - the True Story of 1995-2000 Stock Market. finbold.com/guide/dot-com-bubble/

[31] International banker. (2021) "The Dotcom Bubble Burst (2000)." International Banker, internationalbanker.com/history-of-financial-crises/the-dotcom-bubble-burst-2000/.

[32] Ibid.

[33] Paluteder, Diana. (2022) "Dot-Com Bubble Explained - the True Story of 1995-2000 Stock Market. finbold.com/guide/dot-com-bubble/

[34] Griffith, E. and Johnston, T. (2022) The tech bubble that never burst, The New York Times. The New York Times. Available at: https://www.nytimes.com/interactive/2022/04/19/technology/tech-startup-bubble.html

[35] The Economist (2020) How does today's tech boom compare with the dotcom era?, The Economist. The Economist Newspaper. Available at: https://www.economist.com/finance-and-economics/2020/09/19/how-does-todays-tech-boom-compare-with-the-dotcom-era?utm_medium=cpc.adword.pd&utm_source=google&ppccampaignID=17210591673&ppcadID=&utm_campaign=a.22brand_pmax&utm_content=conversion.direct-response.anonymous&gclid=CjwKCAiA0cyfBhBREiwAAtStHFOEExrqYzdTbEAi54APX9GU8z2KJyR4BbMC04b_qrkaHyEX2Bl4PRoCqo0QAvD_BwE&gclsrc=aw.ds

[36] Ibid.

[37] Labonte, M. and Weinstock, L. (2022) Inflation in the U.S. Economy: Causes and Policy Options. rep. Congressional Research Service. Available at: https://crsreports.congress.gov/product/pdf/R/R47273

[38] Hasslinger, B. (2022) Most startups were overvalued before 2021, and now it's causing problems, TechCrunch. TechCrunch. Available at: https://techcrunch.com/2022/07/01/most-startups-were-overvalued-before-2021-and-now-its-causing-problems/

[39] Halodoc (2021) GENAP Setahun Pandemi di Indonesia, Halodoc Paparkan Perilaku Pengguna di 2020 Dan Langkah Strategis Tahun Ini, pressrelease.id. Kontan.co.id. Available at: https://pressrelease.kontan.co.id/release/genap-setahun-pandemi-di-indonesia-halodoc-paparkan-perilaku-pengguna-di-2020-dan-langkah-strategis-?page=all

[40] Inventure and Alvara (2023) Indonesia Industry Outlook 2023: Industry Megashifts 2023, Inventure. Available at: https://indonesiaindustryoutlook.com/download-e-book-indonesia-industry-outlook-2023/.

[41] Crunchbase (2023) Tanihub, Crunchbase. Available at: https://www.crunchbase.com/organization/tanihub.

[42] Smith, T. (2021) Series B Financing: Definition, Examples, and Funding Sources, Investopedia. Available at: https://www.investopedia.com/terms/s/series-b-financing.asp#:~:text=Series%20B%20financing%20is%20the%20third%20round%20of%20equity%20financing,risky%20than%20Series%20A%20financing

[43] Catriana, E. (2022) Startup Tanihub Digugat PKPU, KOMPAS.com. Kompas. Available at: https://money.kompas.com/read/2022/12/17/201000726/startup-tanihub-digugat-pkpu.

[44] CNBC Indonesia (2023) Shopee PHK 3 Kali dalam 6 Bulan, Karyawan Tunggu Giliran, CNBC Indonesia. Available at: https://www.cnbcindonesia.com/tech/20230310104355-37-420561/shopee-phk-3-kali-dalam-6-bulan-karyawan-tunggu-giliran

[45] Dewi, I. (2023) JD.ID Bangkrut? Manajemen Ungkap Alasan Tutup & Nasib Pegawai, CNBC Indonesia. CNBC Indonesia. Available at: https://www.cnbcindonesia.com/tech/20230131072537-37-409514/jdid-bangkrut-manajemen-ungkap-alasan-tutup-nasib-pegawai

[46] Yusra, Y. (2022) Sayurbox PHK 5% Karyawan untuk Fokus pada Keberlanjutan Bisnis, Daily Social.id. Available at: https://dailysocial.id/post/sayurbox-phk-karyawan-fokus-keberlanjutan-bisnis#:~:text=Sayurbox%2C%20salah%20satu%20startup%20online,untuk%20mempertahankan%20keberlanjutan%20bisnis%20perusahaan.

[47] Kharisma, G. (2022) [Update] 13 Unicorn Indonesia: Riwayat Pendanaan, Nilai Valuasi, dll, Tech in Asia. Available at: https://id.techinasia.com/daftar-unicorn-indonesia-terlengkap.

[48] Situmorang, P. (2022) Harga Saham Turun Dalam, analis sebut Terlalu Besar Bagi Goto Untuk Gagal. Investor.id. Available at: https://investor.id/market-and-corporate/300061/harga-saham-turun-dalam-analis-sebut-terlalu-besar-bagi-goto-untuk-gagal.

[49] Ibid.

[50] Investing (2023) Bukalapak.com PT (BUKA), Investing. Available at: https://id.investing.com/equities/bukalapak.com-pt.

[51] The Economist. (2022). Tech bubbles are bursting all over the place https://www.economist.com/business/2022/05/14/tech-bubbles-are-bursting-all-over-the-place

Center for Digital Society

Fakultas Ilmu Sosial dan Ilmu Politik
Universitas Gadjah Mada
Gedung BC Lt. 2, Ruang BC 201-203
Jalan Socio Yustisia 1
Bulaksumur, Yogyakarta, 55281, Indonesia

Telepon: (0274) 563362, Ext. 116
Email: cfds.fisipol@ugm.ac.id
Situs Web: cfds.fisipol.ugm.ac.id

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